

AMENDMENTS TO THE DRAWINGS

The attached sheet of drawings includes changes to Fig. 1. This sheet, which includes Fig. 1, replaces the original sheet including Fig. 1.

REMARKS/ARGUMENTS

Claims 6, 9-11, 13 and 14 stand rejected, with claims 7, 8 and 12 objected to in the outstanding Official Action. Claims 6-10 and 12 have been amended and newly written claims 15-17 offered for consideration. Therefore, claims 6-17 are the only claims remaining in this application.

The Examiner's acknowledgment of Applicants' claim for foreign priority and receipt of the certified copy of the priority document is very much appreciated. Additionally, the Examiner's consideration of the prior art submitted with Applicants' previously filed Information Disclosure Statement is appreciated.

The Patent Office objects to the arrangement of the specification and objects to the drawings. It is noted that the objection to the arrangement and the drawings appears to be an indication that the originally filed specification and drawings (transmitted from WIPO) do not meet the formality requirements of the U.S. Patent and Trademark Office. The Patent Office is reminded that the U.S. Patent and Trademark Office must comply with all articles of the Patent Cooperation Treaty (PCT) including Article 27. It has been held that:

“if the rule and interpretation of the PTO conflicts with the PCT, it runs afoul of Article 27 of the PCT which provides in part:

- (1) No national law shall require compliance with requirements relating to the form or contents of the international application different from or additional to those which are provided for in this Treaty and the Regulations.” Caterpillar Tractor v. Commissioner, 231 USPQ 590, 591 (EDVA 1986).

The Patent Office has referenced this decision in the Official Gazette dated September 9, 1986 (1070 TMOG 5).

As a consequence, the Patent Office (including the Chief Draftsman's Office) may not require specification format changes and/or drawing corrections (including changes in paper size, margins, etc.) as long as the originally submitted documents comply with the PCT requirements. Inasmuch as this specification and these drawings were forwarded for WIPO, by definition, they meet the PCT requirements (they are not forwarded until they meet PCT requirements.). Therefore, the objection to the specification and Figure 1 is respectfully traversed and reconsideration thereof is respectfully requested.

Notwithstanding the above, applicant has added headings and subheadings to the specification. In section 2 of page 2 of the Official Action, Figure 1 is objected to as not being labeled "Prior Art." Applicants have submitted herewith a replacement sheet with the proper labeling of Figure 1, thereby obviating this objection.

Claims 6, 9-11, 13 and 14 stand rejected under 35 USC §102 as being anticipated by Sanders (U.S. Patent 6,091,356). Applicants' independent claim 6 which originally recited "means to generate" has been amended to recite "means for generating," thereby confirming that Applicants are resorting to the claim format set out in 35 USC §112 (paragraph six). The Examiner does not indicate how or where Applicants' claimed means for generating a lineariser IF signal where the frequency is in a predetermined relationship to the instantaneous output frequency of the voltage-controlled oscillator. This structure is positively recited in claim 6 and this method step is positively recited in claim 11. As a result, such structure must be disclosed in the Sanders reference in order to support a rejection under 35 USC §102.

The Court of Appeals for the Federal Circuit has noted in the case of *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 USPQ 481, 485 (Fed. Cir. 1984) that

"[a]nticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim."

In Sanders, a directional coupler (14, 162) samples the output signal from the oscillator and outputs the sample on line 16. As is well known to those of ordinary skill in the art, a directional coupler is a passive component that directly samples the oscillator output. There is no basis for the Examiner's assumption that a directional coupler as disclosed in Sanders is the same thing as a "lineariser IF signal generator."

In Sanders, a divide-by-4 prescaler divides the frequency of the sampled oscillator signal by a factor of 4 so that a comparison with a referenced chirp signal can take place in the PLL. Further division takes place inside the PLL (as discussed at column 7, lines 50-52) which involves a divide ratio of 450. Thus, the divide-by-4 and then the divide-by-450 provides an overall divide ratio of 1800. The claimed "prescaler means for dividing" is on the order of a ratio of 32 such that the total division equates to a 35 dB difference in the noise requirement on the phase detector (since substantial gain will be necessary in Sanders to amplify such a heavily divided phase error signal as compared to the presently claimed invention).

The present invention avoids the inherent noise problems associated with large divide ratios in frequency synthesizers caused by the need for high amplification, and in the Sanders reference, it is noted that an even further factor of 10 increase in the divide ratio would be needed to achieve a center frequency in the millimeter waveband (described in the present application) which in turn would increase the noise transmitted by a further 20 dB in Sanders.

The problems of the Sanders reference technique are avoided by the use of a swept reference and a lineariser IF signal, i.e., initial down-conversion of the VCO output. As noted

above and in Applicants' specification, use of a down-conversion stage has profound effects on the noise requirements of the phase discriminator used in the system. This allows the present invention to use a much less highly specified phase detector which reduces the cost of the system.

As a result of the above, both apparatus claim 6 and method claim 11 are clearly novel and inventive over the Sanders system. Should the Examiner upon reconsideration still believe Sanders discloses Applicants' claimed invention, he is respectfully requested to indicate where Sanders teaches Applicants' claimed "means for generating a lineariser IF signal" or Applicants' claimed "prescaler means for dividing the lineariser IF signal." Absent such disclosure, the "anticipation" rejection is respectfully traversed.

Applicants also enclose herewith newly written claims 15-17 which are supported by Applicants' specification as filed as follows: claim 15 is disclosed on page 7 at lines 13-15; claim 16 is disclosed on page 8, lines 1-3; and claim 17 is disclosed on page 8, lines 15-17. Entry and consideration of these newly submitted claims is respectfully requested.

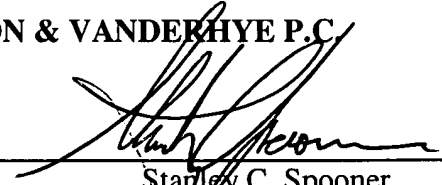
Having responded to all objections and rejections set forth in the outstanding Official Action, it is submitted that pending claims 6-17 are in condition for allowance and notice to that effect is respectfully solicited. In the event the Examiner is of the opinion that a brief telephone or personal interview will facilitate allowance of one or more of the above claims, he is respectfully requested to contact Applicants' undersigned representative.

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Respectfully submitted,

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By: _____


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